Amendments to the Claims:

The following claims will replace all prior versions of the claims in this application (in the unlikely event that no claims follow herein, the previously pending claims will remain):

1. (Currently amended) A process for the recovery of an ethylene and propylene containing stream from a cracked gas resulting from cracking a hydrocarbon stream, ~~characterised in that~~ wherein the cracked gas is treated in an absorptive demethanizer with a C_4/C_5 solvent at a temperature between -10°C and -40°C to free the cracked gas from methane and hydrogen gas, whereafter the remaining stream is treated by distillation in a distillation unit to obtain a C_4/C_5 containing stream and the ethylene and propylene containing stream; whereafter the C_4/C_5 stream is treated with a hydrogen containing stream in a hydrogenation unit, whereafter a part of the hydrogenated C_4/C_5 stream is cooled to a temperature between -10°C and -40°C and recycled to the absorptive demethanizer and a part of the hydrogenated C_4/C_5 stream is separated.

2. (Currently amended) A process according to Claim 1 ~~characterised in that~~ wherein the C_4/C_5 stream is hydrogenated with the use of the hydrogen gas coming from the absorptive demethanizer.

3. (Currently amended) A process according to ~~any one of Claims 1-2, characterised in that~~ Claim 1, wherein the C_4/C_5 stream is substantially hydrogenated in the hydrogenation unit.

4. (Currently amended) A process according to ~~any one of Claims 1-3, characterised in that~~ Claim 1, wherein the C_4/C_5 stream is partly hydrogenated in the hydrogenation unit and part of the C_4/C_5 stream is separated after the hydrogenation unit and treated by catalytic cracking, whereafter an additional ethylene and propylene containing stream is obtained.

5. (Currently amended) A process according to ~~any one of Claims 1-4, characterised in that~~ Claim 1, wherein from the ethylene and propylene containing stream, being substantially free of hydrogen, acetylenes and dienes, ethylene and propylene are chemically absorbed in a solvent containing a compound derived from a metal of group 10 or 11 of the Periodic Table of the Elements, followed by recovery of ethylene and propylene from said solvent by heating and/or by reducing the pressure.

6. (Currently amended) A process according to ~~any one of Claims 1-5, characterised in that~~ Claim 1, wherein the propylene/ethylene ratio in the ethylene and propylene containing stream is higher than 0.55.

7. (Currently amended) A process according to Claim 4, ~~characterised in that~~ wherein the propylene/ethylene ratio in the combined ethylene and propylene containing stream is higher than 0.70.

8. (Currently amended) A recovery section of a hydrocarbon cracker comprising an absorptive demethanizer, a distillation unit and a hydrogenation unit wherein a process according to ~~any one of Claims 1-2~~ Claim 1 is applied.

9. (Currently amended) A recovery section according to Claim 8, ~~characterised in that~~ wherein the hydrogenation in the hydrogenation unit takes place with hydrogen gas from the absorptive demethanizer.

10. (Currently amended) A method to modify an existing hydrocarbon cracker by providing it with a recovery section according to ~~any one of Claims 8-9~~ Claim 8.

11. (New) A process according to Claim 2, wherein the C_4/C_5 stream is substantially hydrogenated in the hydrogenation unit.

12. (New) A process according to Claim 2, wherein the C_4/C_5 stream is partly hydrogenated in the hydrogenation unit and part of the C_4/C_5 stream is separated after the hydrogenation unit and treated by catalytic cracking, whereafter an additional ethylene and propylene containing stream is obtained.

13. (New) A process according to Claim 2, wherein from the ethylene and propylene containing stream, being substantially free of hydrogen, acetylenes and dienes, ethylene and propylene are chemically absorbed in a solvent containing a compound derived from a metal of group 10 or 11 of the Periodic Table of the Elements, followed by recovery of ethylene and propylene from said solvent by heating and/or by reducing the pressure.

14. (New) A process according to Claim 3, wherein from the ethylene and propylene containing stream, being substantially free of hydrogen, acetylenes and dienes, ethylene and propylene are chemically absorbed in a solvent containing a compound derived from a metal of group 10 or 11 of the Periodic Table of the Elements, followed by recovery of ethylene and propylene from said solvent by heating and/or by reducing the pressure.

15. (New) A process according to Claim 2, wherein the propylene/ethylene ratio in the ethylene and propylene containing stream is higher than 0.55.

16. (New) A process according to Claim 2, wherein the propylene/ethylene ratio in the combined ethylene and propylene containing stream is higher than 0.70.